

SECTION 689

METALIZING STEEL

689.1 - DESCRIPTION:

This specification covers the requirements for thermal spray metallic coatings, with or without sealers or top coats, as a means to prevent corrosion of steel surfaces.

All work shall be done at the steel fabrication shop unless otherwise specified.

The requirements outlined in the Society of Protective Coatings Guide for “Thermal Spray Metallic Coating Systems” (SSPC CS-Guide 23.00) shall be followed and considered as part of this specification.

689.2 - MINIMUM REQUIREMENTS:

All metalizing work shall be performed by a company with at least three years of experience in coating steel. Any company which is new to metalizing and does not have three years experience shall, prior to starting any work, submit written documentation of successful structural steel metalizing projects. This shall include the name of the owner of previous projects, number and location of jobs completed, and number of years experience. This document will be reviewed, verified, and approved by the Engineer prior to beginning any work. The company shall possess knowledge and experience in all areas of surface preparation and metalizing work.

Each spray operator shall be qualified to metalize in conformance with the latest edition of ANSI/AWS C2.18. Spray operators not having evidence of qualification shall be prohibited from spraying.

689.3 - MATERIAL:

Unless otherwise specified, the metallic coating to be applied shall be pure zinc, conforming to the requirements of ASTM B6.

The manufacturer shall furnish a Certificate of Analysis for each lot of material supplied. Each container or coil reel shall be properly labeled to identify component type, supplier, size, and wire lot number.

The size of wire material shall conform to the manufacturer's recommendations for the Arc Sprayed method.

The metalizing material shall satisfy the requirements for at least a Class B slip coefficient and creep resistant per Appendix A of the “Specification for Structural Joints Using ASTM A 325 or A 490 Bolts” by the Research Council on Structural Connections. The test results shall be provided to the Engineer by the contractor prior to the start of work.

689.4 - APPLICATION OF METALLIC COATING:

The metalizing unit shall be an arc type gun manufactured by an established domestic company. The equipment shall be used in conformance with the manufacturer's recommendations. No surface shall be sprayed which shows

any signs of rust, scale or moisture. All metalizing shall be applied at 8 - 14 mils (200 - 350 μm) with no individual reading less than 6 mils (150 μm) nor more than 16 mils (400 μm). At least one layer of coating shall be applied within four hours after blasting and the final thickness within a maximum of eight hours of the blasting.

The top flange which will require shear studs shall have the metalizing applied at a minimum of 2 mils (50 μm) in order to prevent rusting. If applied in the shop, the studs shall be installed prior to metalizing. Metalizing of the studs is not required. If installed in the field, the shop applied metalizing on the top of the top flange shall be removed at the stud locations to bare metal prior to installation of the studs.

The contractor shall provide facilities to protect the finished metalized surface from damage during the blasting and thermal spraying work operations on adjacent areas. All damaged coated areas shall be properly repaired and remetalized at no additional cost to the Division.

Surfaces not intended to be metalized shall be suitably protected from the effects of the metalizing operations.

689.5 - SEALERS AND TOP COATS:

The Division has the option of requiring a sealer and/or top coats over the metalizing. When this option is chosen, the requirements will be specified in the contract documents.

689.6 - SHIPPING AND HANDLING:

All fully coated and cured assemblies shall be protected from handling and shipping damage with the prudent use of padded slings, dunnage, separators and tie downs. Loading procedures and sequences shall be designed to protect all coated surfaces. Any damaged areas shall be repaired in conformance with the manufacturer's recommendations or as directed by the Engineer.

689.7 - FIELD TOUCH UP:

All touch up for metalizing shall be in conformance with the coaters recommendations.

689.8

689.8 - METHOD OF MEASUREMENT:

The unit of measurement for “Metalizing Steel” shall be lump sum.

689.9 - BASIS OF PAYMENT:

Basis of payment for “Metalizing Steel” shall be lump sum. Payment shall be full compensation for furnishing all the labor, tools, equipment, supplies, and incidentals necessary to complete the work herein prescribed.

689.10 - PAY ITEMS:

ITEM	DESCRIPTION	UNIT
689001-*	METALIZING STEEL	LUMP SUM
689002-*	METALIZING STEEL WITH SEALER	LUMP SUM
689003-*	METALIZING STEEL WITH SEALER AND TOP COATS	LUMP SUM

* Sequence Number